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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,567	11/21/2001	Tae-Sung Jung	678-775 (P10024)	2637
28249	7590	04/28/2006	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			JOO, JOSHUA	
			ART UNIT	PAPER NUMBER
			2154	

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/990,567	<b>Applicant(s)</b> JUNG, TAE-SUNG	
	<b>Examiner</b> Joshua Joo	<b>Art Unit</b> 2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Response to RCE/Amendment filed 2/23/2006***

1. Claims 1-10 are presented for examination.

***Response to Arguments***

2. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- i) As per claim 1, the limitation of "an agent advertisement message with an address of the second GGSN" is not supported by the specification. According to the specification of the instant application, the mobile node only receives an advertisement message that includes the address of the GGSN of the region in which the mobile node is currently located, and not of the GGSN connected to a home agent.

This is supported by the specification, wherein on Page 10, lines 21-22 and Page 11, lines 6-9, "mobile node (MN) 50 enters a region of a GGSN 60... GGSN 60 transmits an Agent Advertisement message to the mobile node 50... The Agent Advertisement message includes an IP address of the GGSN 60." On Page 12, line 24 – Page 13, line

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1, "the mobile node 50 receives an Agent Advertisement message from GGSN 60 serving as a new foreign agent... without storing a gateway foreign address of the GGSN 60, included in the received Agent Advertisement message.

The specification lacks support that a GGSN transmits an Agent Advertisement message containing the address of another GGSN.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

i) As per claims 4 and 10, "the correspondent node" lacks antecedent basis. It not clear as to which node "the correspondent node" is referring to.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnes et al, US Patent #6,711,147 (Barnes hereinafter), in view of Gustafsson, "Mobile IP Regional Registration" published in July 13, 2000 (Gustafsson hereinafter).

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8. As per claim 1, Barnes teaches substantial features of the claimed invention including a regional tunnel management method in a mobile communication system using Mobile IP, the mobile communication system including a mobile node, a first GGSN (Gateway GPRS (General Packet Radio Service) Support Node) serving as a foreign agent for storing location information of the first GGSN, and a home agent connected to the second GGSN, for performing data communication with a correspondent node (Fig. 4. Col 7, lines 38-62; Col 8, lines 34-46. Mobile node, GSN/FA replaces GGSN of the GPRS network. Takes functionality of GGSN and FA.), the method comprising the steps of:

transmitting a location registration request from the mobile node to the first GGSN (Claim 15; Col 12, lines 55-60; Col 14, line 16-36. Registration request.),

transmitting the location registration request from the first GGSN to the second GGSN (Col 14, lines 33-36. Transmits registration request to the old GSN/FA.); and

registering by the second GGSN an address of the first GGSN to which the mobile node belongs (Col 14, lines 19-23. Register address of new GSN/FA for forwarding.), and the first GGSN transmitting to the home agent, during a re-registration, a Location Information message indicating the address of the first GGSN to which the mobile node belongs (Col 14, lines 20-23, 37-47. Transmit update location message to HA.).

9. Barnes teaches significant features of the claimed invention including a node capable of both GGSN and foreign agents for receiving registration request messages; and transmitting by the first GGSN the location information message. However, Barnes does not teach upon receiving an Agent Advertisement message with an address of the second GGSN and information indicating that the first GGSN supports foreign agent function, said Agent Advertisement message being transmitted by the first GGSN; and transmitting by the second GGSN a location information message to the home agent.

10. Gustafsson teaches of a foreign agent announcing its presence by transmitting an Agent Advertisement message with the address of a gateway foreign agent (GFA) (Page 7, Section 3.3); and transmitting location information of a mobile node to a home agent by the gateway FA (Page 9-10, Section 3.4.2; Page 26).

11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Barnes and Gustafsson because the teachings of Gustafsson for a FA to announce its presence by transmitting an Agent Advertisement message with the address of a GFA; and transmitting location information of a mobile node to a home agent by a node acting as the GFA would improve the system of Barnes by providing an address of the node functioning as the gateway to transmit the registration request message to contact the home agent, and allowing the home agent to update mobile node information to forward data in a network if a FA receives the registration request.

12. As per claim 2, Barnes teaches the method as claimed in claim 1, wherein the location registration request transmitted by the mobile node includes the address of the first GGSN to which the mobile node belongs (Col 12, lines 55-62; Col 14, lines 16-22. Transmits registration request to the current region of GSN.).

13. As per claim 3, Barnes and Gustafsson taught the method as claimed in claim 1, wherein the Agent Advertisement message is transmitted between mobile node and GGSN. Barnes further teaches wherein data is transmitted through a tunnel between the mobile node and first GGSN (Col 2, line 45-53; Col 9, line 53-62. Tunnel data between mobile node to foreign agent.).

14. As per claim 4, Barnes teaches the method as claimed in claim 1, further comprising the steps of:

determining by the home agent whether a destination address of data received from the correspondent node is identical to the address of the second GGSN, upon receiving data destined for the mobile node from the correspondent node (Col 3, lines 41-55; Col 9, lines 53-63. Home agent receives data and identifies address.); and

transmitting the data to the second GGSN, if the destination address of the data is identical to the address of the second GGSN (Col 13, lines 58-60; Col 14, lines 4-9. Transmit data to the old GSN/FA.).

15. As per claim 5, Barnes teaches the method as claimed in claim 4, further comprising the step of transmitting the data to the first GGSN from the home agent, if the destination address of the data is not identical to the address of the second GGSN (Col 14, lines 37-47. New GSN/FA is registered with home agent. Transmit data to the new GSN/FA.).

16. As per claim 6, Barnes teaches of providing the new location of the mobile to the home agent (Col 11, lines 17-24). However, Barnes does not explicitly teach the method as claimed in claim 1, wherein the Location Information message includes the address of the first GGSN and the address of the second GGSN.

17. Gustafsson teaches of transmitting a message containing the address of the FA and the GFA (Page. 9-10, Section 3.4.2).

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18. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Barnes and Gustafsson because the teachings of Gustafsson to transmit a message containing the address of the node serving as the FA and the node serving as the gateway would improve the system of Barnes by providing information for the home agent to forward data to mobile nodes in networks with FA and gateways nodes.

19. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnes), in view of Gustafsson and Helander et al, US Patent #6,735,187 (Helander hereinafter).

20. As per claim 7, Barnes teaches substantial features of the claimed invention including a regional tunnel management method in a mobile communication system using Mobile IP, the mobile communication system including a mobile node, a first GGSN (Gateway GPRS (General Packet Radio Service) Support Node) serving as a foreign agent for storing current location information of the mobile node or serving as a gateway foreign agent for foreign agents existing in a specific region, and a home agent connected to the first GGSN, for performing data communication with a correspondent node (Fig. 4. Col 7, lines 38-62; Col 8, lines 34-46. Mobile node, GSN/FA replaces GGSN of the GPRS network. Takes functionality of GGSN and FA.), the method comprising the steps of:

receiving through a tunnel data, if the mobile node enters a region of the second GGSN (Col 2, line 45-53; Col 9, line 53-62. Tunnel data between mobile node and foreign agent.);

transmitting a first registration request message for requesting location registration from the mobile node to the second GGSN, if the second GGSN serves as the foreign agent (Col 12, lines 55-60; Col 14, line 16-36. Transmits Registration request to GSN/FA.);

transmitting a second registration request message for requesting the location registration for the mobile node from the second GGSN to the first GGSN, if the first GGSN



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serves as the gateway foreign agent (Col 10, line 67 – Col 11, line 4; Col 12, line 57-62; Col 14, line 19-22. Sends request to old GSN/FA.); and

transmitting, during a re-registration, a Location Information message indicating location information of the mobile node from the second GGSN to the home agent, upon receiving the second registration message (Col 14, lines 4-19, 33-37. Change FA. Transmit message to update registration location information to GSN/HA.).

21. Barnes teaches substantial features of the claimed invention including a GSN/FA node takes performs functionality similar to a GGSN and FA; creating a tunnel between the mobile node and a foreign agent (FA) for communication; and transmitting a registration request by the mobile node. However, Barnes does not explicitly teach of creating by the mobile node a GTP (GPRS Tunneling Protocol) tunnel and receiving through the created GTP tunnel an Agent Advertisement message indicating whether a second GGSN serves as the foreign agent or the gateway foreign agent, if the mobile node enters a region of the second GGSN; and the first GGSN transmitting location information to the home agent.

22. Helander teaches in the "Background" the concept of communicating through GTP tunneling, wherein the tunnel runs from a GGSN to a tunnel device (Col 2, lines 6-15).

23. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings Barnes and Helander because the teachings of Helander to provide GTP tunneling for communication would improve the system of Barnes by providing a secure path between a packet data network and the mobile station in the GPRS network.

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24. Gustafsson teaches of a new FA transmitting agent advertisement message if the mobile node enters the region of the new FA; and transmitting location information of a mobile node to a home agent by a gateway FA (Page 9-10, Section 3.4.2; Page 26).

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Barnes, Helander, and Gustafsson because the teachings of Gustafsson for a FA to announce its presence by transmitting an Agent Advertisement message with the address of a GFA; and transmitting location information of a mobile node to a home agent by a node acting as the GFA would improve the system of Barnes and Helander by providing an address of the node functioning as the gateway to transmit the registration request message to contact the home agent, and allowing the home agent to update mobile node information to forward data in a network if a FA receives the registration request.

26. As per claim 8, Barnes does teach the method as claimed in claim 7, wherein the Location Information message includes an IP address of the first GGSN and an IP address of the second GGSN.

27. Gustafsson teaches of transmitting a message containing the address of the FA and the GFA (Page. 9-10, Section 3.4.2).

28. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Barnes, Helander, and Gustafsson because the teachings of Gustafsson to transmit a message containing the address of the node serving as the FA and the node serving as the gateway would improve the system of Barnes and Helander by providing information for the home agent to forward data to mobile nodes in networks with FA and gateways nodes.

29. As per claim 9, Barnes teaches the method as claimed in claim 7, further comprising the steps of: transmitting the Location Information message indicating the location information of the mobile node from the second GGSN to the home agent, upon receiving the first registration request message (Col 12, lines 55-60; Col 14, line 16-36. Transmits Registration request to GSN/FA. Col 14, lines 4-19, 33-37. GSN/FA transmits message to update registration location information to GSN/HA).

30. As per claim 10, Barnes teaches the method as claimed in claim 7, further comprising the step of, upon receiving data destined for the mobile node from the correspondent node after receiving the Location Information message, transmitting the received data from the home agent to the second GGSN to which the mobile node is currently connected (Col 14, lines 37-47. New GSN/FA is registered with home agent. Transmit data to the new GSN/FA.).

### ***Conclusion***

31. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- i) Bjelland et al, US Publication #2002/0034935, teaches of a mobile station sending a request and forming a GTP tunnel.

32. A shortened statutory period for reply to this Office action is set to expire THREE MONTHS from the mailing date of this action.

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Thursday 8AM to 5PM and every other Friday.

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34. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on 571 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

35. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 20, 2006  
JJ

John Follansbee  
SPE 2154

